

The species varies in colour from dull green to black. There is also considerable variation in markings, some specimens being almost immaculate.

C. lepida, Dej.—Only found on drifting sand planes, on sand, which they very closely resemble in colour. This is the weakest flier of any Manitoba tiger-beetle that I have collected, and towards the end of their season, at about the time when eggs are being deposited, the females make no attempt to fly, but are obliged to trust entirely to their running powers as a means of escape. They are usually found on the sunny side of a drifting sand-bank, where they get blown by the wind.

Lepida appears late in June, and is most numerous in July. It disappears towards the end of August. I have only once found it at all plentiful.

NOTES AND DESCRIPTIONS OF MEMBRACIDÆ.

BY C. F. BAKER, ESTACION AGRONOMICA, SANTIAGO DE LAS VEGAS, CUBA.

CENTROTIDÆ.

Gerridius abbreviatus, n. sp.

Length, 4.5 mm., male. General form and colour of *G. scutellatus*, but differing widely in the following characters: Legs mostly piceous; the scutellar protuberance directed somewhat forward instead of backward; marks of tegmina arranged in the same pattern, but the oblique band at the middle of tegmina very broad and heavy, being three times as broad at middle of tegmina as at tip of clavus; tegmina with apical margin entirely fuscous, the larger spot at outer tip much broader than long. The most distinctive character lies in the form of the tegmina, which are much shorter than in *G. scutellatus*, the middle apical cell being two-thirds the length of the second discoidal cell, the same cell in *G. scutellatus* not being one-half of second discoidal.

I collected this interesting species at San Marcos, an Indian pueblo well up in the western coast range of Nicaragua.

Ischnocentrus niger, Stal.

The small dark males and the larger paler females (originally described as *I. ferruginosus*, Stal.) I found not uncommon at San Marcos, Grenada, and Chinandega in Nicaragua, these points all being far north of the records given in Biol. Cent. Amer.

SMILIDÆ.

Cyrtolobus Vanduzeei, Godg.

This species was formerly described by Goding under the genus *Smilia*, a genus noted especially for the great elevation of the pronotum

over the lateral angles. But the present species has the form not of *Smilia*, but of *Cyrtolobus*. These two genera cannot be separated by the presence or absence of a cross-vein between the two ulnar veins, since this cross-vein is frequently absent in *Cyrtolobus*, and is commonly present or represented by rudiments in *Smilia*; indeed, numerous specimens in both genera may be found that are *Cyrtolobus* on one side and *Smilia* on the other, and this is a common condition in the species under discussion. However, *Cyrtolobus* rarely has the pronotum at all elevated so far forward as above the lateral angles.

Telamonanthe Rileyi, Godg.

During all the days of collecting I was able to crowd into a busy three years on the West Coast, I was continually looking for the two species of *Telamona* described by Goding as *Rileyi* and *Coquillettii*. Though I collected some *Telamona* related to the *reclinata* of Fitch, still there were no *Telamona* that possessed the characters of these species. I had, however, taken a series of specimens in Middle and Southern California, and received others from Oregon, of a species certainly as variable as any *Telamona*, but belonging in another group of the family. It possessed a petioled apical cell in the wings, and had, besides, the tegminal venation nearly, and also the very strongly produced shoulders of *Antianthe*. Its pronotal hump was more like that of certain *Telamona* than *Antianthe*, not being quite so evenly rounded in front, and rather deeply depressed behind. In two other important particulars it differs widely from *Antianthe*: the radial nervure is distant from the costa and quite close to the outer ulnar, leaving a broad costal area; almost the whole area bounded by the costa and the inner ulnar, except at extreme apex just before the apical areas, is thick coriaceous and strongly punctate throughout.

I had separated this as a new genus and species, and was about to describe it when, through the kindness of Dr. Howard and Mr. Heide-man, I was able to study authentic specimens of Goding's *Telamona Rileyi* and *T. Coquillettii*. In these specimens I found the very species with which I had been working, both representing merely such forms as I possessed a number of within the same species limits, and such as might be found in considerable numbers in almost any eastern species of *Cyrtolobus* and *Telamona*. Goding was evidently misled by the general form and failed to examine the wing venation, or he would never have referred it to *Telamona*. I had named it *Telamonanthe*, and it may bear that name, with *Rileyi* as the type and *Coquillettii* as a synonym.

In the darker forms (the darkest from Oregon) there is a broad brown band with lighter margins, sometimes entirely involving the protuberance, and extending downward and backward to the margin of the pronotum. The anterior extremity of the brown mark, medially, where the protuberance slopes down in front to the level of the pronotum, persists as a characteristic brownish mark even in the palest southern forms, and is present as usual in both of the forms named by Goding.

Micrutalis, sp.

This genus might almost be called the dominant group of the superfamily in Central America and the West Indies, as it is also in the Southern United States. But it is also widely distributed in the United States and Canada. One has only to collect considerable series in any species—say *calva*, which is common in the United States—to discover that like some other membracids (*Telamona* or *Cyrtolobus*, for instance) these species possess a remarkable range of colour variation. Even *Clastoptera proteus* with all its forms is not more protean than some of these species of *Micrutalis*. But I cannot find in the literature that any account has been taken of these marvellous variations, nor have I seen heretofore sufficiently large series in collections to properly illustrate them. Many of the *Micrutalis* "species" of literature have been described from one or a few specimens, whereas but very few of the names represent more than the merest colour forms, as large series clearly prove. For instance, I have now before me from the Southern States, Mexico, Central America and the West Indies, a series of one hundred and seventy-two specimens, which evidently belong to the one specific group, *binaria*, of Fairmaire, some from Belize representing the typical form.

But in the lot there are scarcely two exactly alike, and the gradations extend in various directions. For some of these names can be found, like *mutabilis*, Fowler; *discahis*, Walker; *pallens*, Fowler; *lugubrina*, Stal; *Illinoiensis*, Goding; *apicalis*, Goding; *trifurcata*, Goding; *occidentalis*, Goding; *parva*, Goding; and *binotata*, Goding. All of these are based on the merest colour characters. But we would need twice again as many names to designate the other forms which are equally distinct, and all of which present the same range of form, size and structural characters as the original *binaria*. The relation of this species to *calva*, which appears to be generally larger and longer, and the variability of *calva*, are matters to be investigated by the many collectors living within the range of *calva*. Part, at any rate, of the South American species of Stal are the merest colour forms, and the relation of all of them to *binaria* and more northern

forms must be established by the collection of large series, before a stable nomenclature for the group as a whole can be even suggested. For instance, the *plagiata* of Stal and the *malleifera* of Fowler apparently belong to the same specific group, being very close, structurally. *Malleifera* as it occurs in Nicaragua, Mexico and Belize, is extremely variable. The species of true *Acutalis* are also remarkably variable and equally worthy of collection and investigation.

DARNIDÆ.

Darnoides flavescens, n. sp.

Length, about 4.5 mm. This is a pale yellowish-brown species with an evenly-rounded, not at all raised pronotum, which is evenly, coarsely punctate, and its acute point tipped with black. The sternum is blackened. The tip of pronotum reaches the end of clavus. The tegmina are glassy hyaline, the nervures are pale at base to dark at tip; at extreme base of clavus, and of corium between ulnar vein and costa, the substance of the tegmina is coriaceous and strongly punctate, the puncturing extending outward some distance along the veins. The claval nervure is not half the length of the clavus. The terminal veins are nearly straight except the second from costal margin, which is distally bent towards the costa. There is a single large discoidal cell formed by a cross-vein between inner and outer ulnar veins before the middle of tegmina.

This species was collected in Belize, British Honduras, by a former student of mine, Mr. J. D. Johnston.

Darnoides semicrema, n. sp.

There occurs not uncommonly in the vicinity of Havana, a small membracid which bears a remarkable resemblance to *Acutalis semicrema*, and possibly may be found in some collections under that name. It is, however, shorter and more robust, and differs wholly in its family and genus characters. I cannot find that it has been described. Even if I make a synonym, however, I trust that it will be a readily recognizable one. It is sometimes necessary to make a synonym in order to properly elucidate and bring to light some of the ancient and illy-defined species which would otherwise remain merely stumbling blocks in our literature.

Length, 4.5 mm.; width across pronotum, 2.25 mm. Legs, sternum and abdomen of varying shades of shining piceous, lighter on dorsum and on tibiæ and tarsi. The abdominal segments are narrowly margined with paler. The sternum anteriorly and a large spot on sides of metathorax are more or less white waxy pruinose, the latter spot showing through the costal base of tegmina. The head is very short and broad, the vertex

entirely black to near the front margin of eyes, its surface sparsely and microscopically wrinkled and punctured; the remainder of the head is yellow. The ocelli are slightly farther from each other than from the eyes. The genal margins join the clypeus on either side almost in one straight line. The clypeus extends abruptly, evenly rounded, about as long as wide.

The pronotum on anterior half is black, the posterior half and the sides extending to shoulders are yellow. Over each eye is a large triangular piceous blotch. The pronotum in front is nearly smooth, posteriorly dark punctate. Viewed from the side the upper margin of posterior half is nearly straight, the lower margin between shoulder and tip is trisinate, the median sinus stronger, and between this and the margin a submarginal pitted groove. The tip of pronotum reaches nearly to end of first inner apical cell.

The claval nervure is more than half the length of clavus. There are three discoidal cells, due to a forking of the outer anteapical nervure and a cross-vein between the two ulnars. The basal cell is small and triangular, and scarcely half the length of the anteapical cell beyond it. The two outer terminal nervures are slightly curved towards the costa. The tegmina are somewhat smoky, the nervures dark distally to nearly colourless at the base. The claval suture and commisural margin are blackened at the extreme base. The corium at base is only punctured along the nervures, while one-fourth of the clavus is coriaceous and punctate. The central apical cell of wings is long and narrow, the sides subparallel and the base truncate.

MOSQUITO NOTES FOR 1906.

It has been customary in the past to speak of mosquito larvæ or wrigglers as dependent on atmospheric air, and to assert that they would drown if shut off from the surface for more than a few minutes. When it was discovered that some wrigglers with well-developed air-tubes were really aquatic, and rarely came to the surface at all until ready to pupate, it was necessary to modify that statement and to admit of numerous exceptions. Yet the statement is still a serviceable one when applied to the more troublesome species, and forms the basis upon which we